**AP Statistics Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Ch. 12 Classwork Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Block: \_\_\_\_\_\_**

1. A statistics teacher wants to know how her students feel about an introductory statistics course. She decides to administer a survey to a random sample of students taking the course. She has several sampling plans to choose from. Name the sampling strategy in each.
2. There are four ranks of students taking the class: freshmen, sophomores, juniors, and seniors. Randomly select 15 students from each class rank.
3. Randomly select a class rank (freshmen, sophomores, juniors, and seniors) and survey every student in that class rank.
4. Each student has a nine-digit student number. Randomly choose 60 numbers.
5. Using the class roster, select every fifth student from the list.
6. Explain why the second plan suggested above (sampling all students from one class rank) might be biased. Be sure to name the kind(s) of bias you describe.
7. Listed below are the names of 20 students who are juniors. Use the random numbers listed below to select five of them to be in your sample. **Clearly** explain your method.

TABLE OF RANDOM DIGITS:

04028 55259 81183 40754 60209 06765 27306

28370 82669 83236 77479 90618 43707 78695

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Adam | Chris | Dave | Deidre | Dick |
| Ellen | Eric | Joan | John | Judi |
| Joy | Kenny | Laura | Mary | Paul |
| Peter | Rachel | Rob | Sara | Stacey |

4. Name and **describe** the kind of bias that might be present if the statistics teacher decides that instead of randomly selecting students to survey on how they feel about the course she just...

1. asks students to volunteer for the survey.
2. gives the survey during class one day.

**For each situation find the following information if possible:**

1. **Population of interest b. Parameter of interest c. Sampling Frame**

**d. Sample e. Sample Design f. Possible sources of bias**

5. A local community service organization wants to find out what kind of support they would get from the neighborhood to convert a vacant lot into a community garden. They go to the local park on a Saturday and Sunday afternoon. They stop every other person at the park and ask them if they support the idea of turning the vacant lot into a garden.

6. A state senator tired of the politics of his party is thinking of running as an independent. He is interested in seeing what his chances would be of being re-elected as an independent candidate by voters in his state. His staff checks the voting records and randomly samples 50 voters that had voted for him in the previous election from each of the 15 counties in the state. They call these voters and ask if they would vote for him if he were no longer a member of the political party.

7. A big national candy company has created two new flavors of a popular hard candy. They want to see which is more popular with their customers, so they start a new advertisement campaign to help them figure this out. They create commercials (for national broadcast that are run during Saturday mornings) that ask people to go to the company’s website and vote on which of the two new flavors they like the best.